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10/671,738	09/29/2003	Masahiro Ishiyama	03180.0335	6750

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EXAMINER	
ALI, FARHAD	

ART UNIT	PAPER NUMBER
2146	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/671,738	ISHIYAMA ET AL.	
	Examiner	Art Unit	
	FARHAD ALI	2146	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-7,9-14 and 16-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-7,9-14 and 16-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2, 4-8, 10-14, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (US 5,185,860 A) in view of Chung et al. (US 7,280,999 B2) hereinafter Chung.

Claim 1

Wu teaches a name resolution device for managing a name of each node connected to a network and an address for identifying each node, comprising:

a node information storing unit configured to store a node information containing a name of a node, a network identification information, a prefix indicating a position on the network, and an interface identification information of a node, for each node **([Wu] Column 5 Lines 58-60, "Block 604 then initializes the database used to permanently store the nodes)**;

a node information collecting unit configured to collect the node information of other nodes connected to the network, through the network **([Wu] Column 5 Lines 35-41, "Referring now to FIGS. 3 through 5, discovery module 302 is the main module of the system. Discovery calls self-seed block 304 to start the process of**

building a database about the network, and it calls process-node block 306 to process information about each node that it obtained from self-seed");

Chung teaches a node information updating unit configured to update the node information stored in the node information storing unit, according to the node information of the other nodes collected by the node information collecting unit, by updating the prefix stored in the node information storing unit by using the interface identification information contained in the node information collected by the node information collecting unit as a key **([Chung] Column 3 Lines 35-42, "The network address server includes an 35 address name database, and an address name processor in communication with the address name database for providing a response to a query for the network address corresponding to the target address name label")**;

a function conversion unit configured to convert the interface identification information corresponding to a prescribed node among the node information stored in the node information storing unit, by using a one way function **([Chung] Column 5 Lines 1-4, "Further, the domain name label of each database record is associated with a hash code derived from a hashing function which uniquely associates the derived hash code with the corresponding domain name label")**;

a comparing unit configured to compare the interface identification information converted by using the one way function which is received from another node, with the interface identification information as converted by the function conversion unit **([Chung] Column 5 Lines 5-12 "The correlation processor includes a hash code**

processor for encoding the target 5 domain name label with the hashing function, and a search engine in communication with the correlation processor for querying the hashed database records with the hashed domain name label. The correlation processor obtains the correlation by encoding the target domain name label with 10 the hashing function, and querying the hashed database records with the hashed domain name label"); and

a node information providing unit configured to provide the prefix corresponding to the interface identification information compared by the comparing unit to the another node, but without the interface identification information, only when it is judged that the converted interface identification information from the function conversion unit coincides with the converted interface identification information from the another node at the comparing unit **([Chung] Column 9 Lines 37-50, "As will be apparent, the correlation processor 216 continues to analyse each database record 300 until either a matching database record 300 is located in the respective address name database 212 or until all the data- 40 base records 300 in the respective address name database 212 have been analyzed. If the address name database 212 includes one or more alias address name labels 302, the correlation processor 216 analyzes each database record 300 until all database records 300 have been analyzed, or until a 45 database record 300 is located in which the address name label 302 or alias address name label(s) 302 (and the associated character set identifier 306) matches the character sequence of the target domain name label 402 (and the associated domain name character set identifier 404)")**.

It would have been obvious to one of ordinary skill in the art to incorporate Chung's teachings of resolving resolving network addresses with Wu's teachings of automatically discovering network elements. Both are in the same field of invention, and combining them would provide predictable results to one of ordinary skill in the art. Chung's disclosure is more concerned with resolving network addresses and while Wu teaches general discovery techniques that include many of the same functions as well as additional functions such as updating information. These functions would be recognized by one of ordinary skill in the art to be part of a regular discovery and resolution process as described by Wu, whereas Chung focuses on the particular aspect of network resolution. Combining Wu and Chung would provide for a network discovery service with the added ability to properly resolute network discrepancies.

Claim 2

Wu in view of Chung teach the name resolution device of claim 1, wherein the node information updating unit updates the node information stored in the node information storing unit for which the interface identification information coincides with that of the node information collected by the node information collecting unit but title prefix does not coincide with that of the node information collected by the node information collecting unit **([Wu] Column 8 Lines 25-32, "each IF table entry will have a corresponding IP table entry, and the IP entry is referenced by an index value contained in the IF entry. Block 1204 then determines whether a matching IP record exists. If a matching IP record does exist, block 1204 transfers to block**

1206 which moves the physical address from the IP record to the node record in the node list. Block 1208 then updates any state information in the node record").

Claim 3

(Cancelled)

Claim 4

Wu in view of Chung teach the name resolution device of claim 1, wherein the function conversion unit uses a hash function as the one way function **([Wu] Column 9 Lines 5-7, "Referring now to FIG. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list")**.

Claim 5

Wu in view of Chung teach the name resolution device of claim 1, farther comprising:

a prefix conversion unit configured to convert the prefix into a position identification information which is in one-to-one correspondence to the prefix; wherein the node information storing unit stores the position identification information obtained by the prefix conversion unit, as the prefix **([Wu] Column 9 Lines 7-11, "Block 1504 then allocates memory for a node record, and block 1506 stores the data available for the node into the node record at the location pointed to by the hashed IP address")**.

Claim 6

Wu in view of Chung teach the name resolution device of claim 1, further comprising:

an address generation unit configured to generate an IPv6 address dynamically, according to the node information stored in the node information storing unit **([Wu] Column 10 Lines 40-43, "FIG. 10 shows a flowchart of the process-IFIP module block 310 (FIG. 3). The IF and IP tables are available in a node to define the translation of physical addresses to IP addresses")**.

Claim 7

Wu teaches a name resolution method for managing a name of each node connected to a network and an address for identifying each node, comprising:

storing a node information containing a name of a node, a network identification information, a prefix indicating a position on the network, and an interface identification information of a node, for each node **([Wu] Column 5 Lines 58-60, "Block 604 then initializes the database used to permanently store the nodes)**;

collecting the node information of other nodes connected to the network, through the network **([Wu] Column 5 Lines 35-41, "Referring now to FIGS. 3 through 5, discovery module 302 is the main module of the system. Discovery calls self-seed block 304 to start the process of building a database about the network, and it**

calls process-node block 306 to process information about each node that it obtained from self-seed");

Chung teaches updating the node information stored by the storing, according to the node information of the other nodes collected by the collecting, by updating the prefix stored by the storing by using the interface identification information contained in the node information collected by the collecting as a key **([Chung] Column 3 Lines 35-42, "The network address server includes an 35 address name database, and an address name processor in communication with the address name database for providing a response to a query for the network address corresponding to the target address name label")**;

converting the interface identification information corresponding to a prescribed node among the node information stored by the storing step, by using a one way function **([Chung] Column 5 Lines 1-4, "Further, the domain name label of each database record is associated with a hash code derived from a hashing function which uniquely associates the derived hash code with the corresponding domain name label")**;

comparing the interface identification information converted by using the one way function which is received from another node but without the interface identification information, with the interface identification information as converted by the converting step **([Chung] Column 5 Lines 5-12 "The correlation processor includes a hash code processor for encoding the target 5 domain name label with the hashing function, and a search engine in communication with the correlation processor**

for querying the hashed database records with the hashed domain name label. The correlation processor obtains the correlation by encoding the target domain name label with 10 the hashing function, and querying the hashed database records with the hashed domain name label"); and

providing the prefix corresponding to the interface identification information compared by the comparing step to the another node, only when it is judged that the converted interface identification information coincides with the converted interface identification information from the another node at the comparing step **([Chung] Column 9 Lines 37-50, "As will be apparent, the correlation processor 216 continues to analyse each database record 300 until either a matching database record 300 is located in the respective address name database 212 or until all the data- 40 base records 300 in the respective address name database 212 have been analyzed. If the address name database 212 includes one or more alias address name labels 302, the correlation processor 216 analyzes each database record 300 until all database records 300 have been analyzed, or until a 45 database record 300 is located in which the address name label 302 or alias address name label(s) 302 (and the associated character set identifier 306) matches the character sequence of the target domain name label 402 (and the associated domain name character set identifier 404)")**.

It would have been obvious to one of ordinary skill in the art to incorporate Chung's teachings of resolving resolving network addresses with Wu's teachings of automatically discovering network elements. Both are in the same field of invention,

and combining them would provide predictable results to one of ordinary skill in the art. Chung's disclosure is more concerned with resolving network addresses and while Wu teaches general discovery techniques that include many of the same functions as well as additional functions such as updating information. These functions would be recognized by one of ordinary skill in the art to be part of a regular discovery and resolution process as described by Wu, whereas Chung focuses on the particular aspect of network resolution. Combining Wu and Chung would provide for a network discovery service with the added ability to properly resolute network discrepancies.

Claim 8

Wu in view of Chung teach the name resolution method of claim 7, wherein the updating step updates the node information stored by the storing step for which the interface identification information coincides with that of the node information collected by the collecting step but the prefix does not coincide with that of the node information collected by the collecting step **([Wu] Column 8 Lines 25-32, "each IF table entry will have a corresponding IP table entry, and the IP entry is referenced by an index value contained in the IF entry. Block 1204 then determines whether a matching IP record exists. If a matching IP record does exist, block 1204 transfers to block 1206 which moves the physical address from the IP record to the node record in the node list. Block 1208 then updates any state information in the node record")**.

Claim 9

(Cancelled)

Claim 10

Wu in view of Chung teach the name resolution method of claim 7, wherein the converting step uses a hash function as the one way function **([Wu] Column 9 Lines 5-7, "Referring now to FIG. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list")**.

Claim 11

Wu in view of Chung teach the name resolution method of claim 7, further comprising:

converting the prefix into a position identification information which is in one-to-one correspondence to the prefix; wherein the storing step stores the position identification information obtained by the converting step, as the prefix **([Wu] Column 9 Lines 7-11, "Block 1504 then allocates memory for a node record, and block 1506 stores the data available for the node into the node record at the location pointed to by the hashed IP address")**.

Claim 12

Wu in view of Chung teach the name resolution method of claim 7, further comprising: generating an IPv6 address dynamically, according to the node information

stored by the storing step **([Wu] Column 10 Lines 40-43, "FIG. 10 shows a flowchart of the process-IFIP module block 310 (FIG. 3). The IF and IP tables are available in a node to define the translation of physical addresses to IP addresses")**.

Claim 13

Wu teaches a computer-readable medium having computer-executable instructions for performing a method for causing a computer to function as a name resolution device for managing a name of each node connected to a network and an address for identifying each node, the method comprising:

storing a node information containing a name of a node, a network identification information, a prefix indicating a position on the network, and an interface identification information of a node, for each node **([Wu] Column 5 Lines 58-60, "Block 604 then initializes the database used to permanently store the nodes)**;

collecting the node information of other nodes connected to the network, through the network **([Wu] Column 5 Lines 35-41, "Referring now to FIGS. 3 through 5, discovery module 302 is the main module of the system. Discovery calls self-seed block 304 to start the process of building a database about the network, and it calls process-node block 306 to process information about each node that it obtained from self-seed")**;

Chung teaches updating the stored node information, according to the collected node information of the other nodes, by updating the stored prefix using the interface identification information contained in the collected node information as a key **([Chung]**

Column 3 Lines 35-42, "The network address server includes an 35 address name database, and an address name processor in communication with the address name database for providing a response to a query for the network address corresponding to the target address name label");

converting the interface identification information corresponding to a prescribed node among the stored node information, by using a one way function **([Chung] Column 5 Lines 1-4, "Further, the domain name label of each database record is associated with a hash code derived from a hashing function which uniquely associates the derived hash code with the corresponding domain name label")**;

comparing the interface identification information converted by using the one way function which is received from another node, but without the interface identification information, with the converted interface identification information **([Chung] Column 5 Lines 5-12 "The correlation processor includes a hash code processor for encoding the target 5 domain name label with the hashing function, and a search engine in communication with the correlation processor for querying the hashed database records with the hashed domain name label. The correlation processor obtains the correlation by encoding the target domain name label with 10 the hashing function, and querying the hashed database records with the hashed domain name label")**; and

providing the prefix corresponding to the compared interface identification information to the another node, only when it is judged that the converted interface identification information from the function conversion unit coincides with the converted

interface identification information from the another node when comparing **([Chung] Column 9 Lines 37-50, "As will be apparent, the correlation processor 216 continues to analyse each database record 300 until either a matching database record 300 is located in the respective address name database 212 or until all the data- 40 base records 300 in the respective address name database 212 have been analyzed. If the address name database 212 includes one or more alias address name labels 302, the correlation processor 216 analyzes each database record 300 until all database records 300 have been analyzed, or until a 45 database record 300 is located in which the address name label 302 or alias address name label(s) 302 (and the associated character set identifier 306) matches the character sequence of the target domain name label 402 (and the associated domain name character set identifier 404)")**.

It would have been obvious to one of ordinary skill in the art to incorporate Chung's teachings of resolving resolving network addresses with Wu's teachings of automatically discovering network elements. Both are in the same field of invention, and combining them would provide predictable results to one of ordinary skill in the art. Chung's disclosure is more concerned with resolving network addresses and while Wu teaches general discovery techniques that include many of the same functions as well as additional functions such as updating information. These functions would be recognized by one of ordinary skill in the art to be part of a regular discovery and resolution process as described by Wu, whereas Chung focuses on the particular

aspect of network resolution. Combining Wu and Chung would provide for a network discovery service with the added ability to properly resolute network discrepancies.

Claim 14

Wu in view of Chung teach the computer-readable medium of claim 13, wherein the updating includes updating the stored node information for which the interface identification information coincides with that of the collected node information but the prefix does not coincide with that of the collected node information **(([Wu] Column 8 Lines 25-32, "each IF table entry will have a corresponding IP table entry, and the IP entry is referenced by an index value contained in the IF entry. Block 1204 then determines whether a matching IP record exists. If a matching IP record does exist, block 1204 transfers to block 1206 which moves the physical address from the IP record to the node record in the node list. Block 1208 then updates any state information in the node record")**.

Claim 15

(Cancelled)

Claim 16

Wu in view of Chung teach the computer-readable medium of claim 13, wherein the converting uses a hash function as the one way function **(([Wu] Column 9 Lines 5-7, "Referring now to FIG. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list")**.

Claim 17

Wu in view of Chung teach the computer-readable medium of claim 13, further comprising:

converting the prefix into a position identification information which is in one-to-one correspondence to the prefix; wherein the storing includes storing the converted position identification information as the prefix **(([Wu] Column 9 Lines 7-11, "Block 1504 then allocates memory for a node record, and block 1506 stores the data available for the node into the node record at the location pointed to by the hashed IP address")**.

Claim 18

Wu in view of Chung teach the computer-readable medium of claim 13, further comprising:

generating an IPv6 address dynamically, according to the node information stored in the first computer program code **(([Wu] Column 10 Lines 40-43, "FIG. 10 shows a flowchart of the process-IFIP module block 310 (FIG. 3). The IF and IP tables are available in a node to define the translation of physical addresses to IP addresses")**.

Response to Arguments

3. Applicant's arguments with respect to claims 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FARHAD ALI whose telephone number is (571)270-1920. The examiner can normally be reached on Monday thru Friday, 7:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey C. Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Farhad Ali/
Examiner, Art Unit 2146

/Jeffrey Pwu/
Supervisory Patent Examiner, Art Unit 2146